Appendix SI-1 Glossary

This section defines terms and acronyms as they are used in this paper.

ACE V The prevailing method for latent print examination: Analysis, Comparison, Evaluation, Verification. APS Analysis phase An electronic file and interchange format that is the basis for biometric and forensis standards used around the phase. An electronic file and interchange format that is the basis for biometric and forensis standards used around the world, including the File ESTS and Interpol's INT-1, among others. As of 2011, this incorporates the Extended Feature Set (FFS) definition of friction ridge features used in his study [1]. The clarity of a friction ridge impression refers to the fidelity with which anatomical details are represented in a biometric and forensis standards used around the world, including the File ESTS and Interpol's INT-1, among others. As of 2011, this incorporates the Extended Feature Set (FFS) definition of friction ridge features used in historial file. The score of the set of the	ACE	The phases of ACE-V prior to verification: Analysis, Comparison, Evaluation.
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Measuring what latent fingerprint examiners consider sufficient information for individualization determinations — Appendices

	often described as a "mark" or "trace" and "print" is used to refer only to known impressions (exempless)
Level-3 detail	often described as a "mark" or "trace," and "print" is used to refer only to known impressions (exemplars). Friction ridge dimensional attributes such as width, edge shapes, and pores.
Local clarity map	A color-coded annotation of a friction ridge image indicating the clarity for every location in the print, as described in [3] and defined in the ANSI/NIST-ITL standard [1].
Mated	A pair of images (latent and exemplar) known <i>a priori</i> to derive from impressions of the same source (finger). Compare with "individualization," which is an examiner's <i>determination</i> that the prints are from the same source.
Median clarity map	A local clarity map combining the annotations from multiple examiners, based on the median clarity at each location across the clarity maps from all examiners who annotated the clarity of an image (or image pair, for median corresponding clarity maps).
Minutiae	Events along the path of a single path, including bifurcations and ending ridges. In this study, examiners did not differentiate between bifurcations and ending ridges. Dots are considered minutiae in some uses, but not for AFIS usage; in this study, examiners were instructed to mark dots as "other" features.
Misclassification rate	The proportion of responses that would be incorrectly classified as individualization or not individualization for a given model.
Missed ID	Failure by an examiner to individualize a mated pair that was individualized by any other examiners (also known as a "missed individualization" or "missed identification").
Noncorresponding feature	A discrepancy – a feature that exists in one print and is definitely not present in the other print. Participants were instructed to indicate points in one print that definitely do not exist in the other print as needed to support an exclusion determination.
Nonmated	A pair of images (latent and exemplar) known <i>a priori</i> to derive from impressions of different sources (different fingers and/or different subjects).
NV (No value)	The impression is not of value for individualization and contains no usable friction ridge information. See also VEO and VID.
Other point	In this study, features such as scars, dots, incipient ridges, creases and linear discontinuities, ridge edge features, or pores (i.e., features other than minutiae, cores, and deltas).
Overall Clarity	A metric based on the size and consistency of the areas of the various levels of clarity in a local clarity map, described in [3]. Overall Clarity ranges from 0-100 and was developed to correspond to human examiner assessments of the value and difficulty of an image.
Qualified examiner	Determined by an agency to be appropriately qualified as a latent print examiner. Used instead of "certified" in some organizations to differentiate from the IAI certification, "Certified Latent Print Examiner."
Repeatability	Intraexaminer agreement: when one examiner provides the same response (annotation or determination) to a stimulus (image or image pair) on multiple occasions.
Reproducibility	Interexaminer agreement: when multiple examiners provide the same response (annotation or determination) to a stimulus (image or image pair).
Source	An area of friction ridge skin from which an impression is left. Two impressions are said to be from the "same source" when they have in common a region of overlapping friction ridge skin.
Sufficient	An examiner's assessment that the quality and quantity of information in a print (or image pair) justifies a specific determination (especially used with respect to individualization).
SWGFAST	Scientific Working Group on Friction Ridge Analysis, Study and Technology
ULW	The FBI's Universal Latent Workstation software [6].
Unassociated feature	A feature marked in one print for which the examiner did not indicate any level of correspondence or non- correspondence with respect to the other print (often either obscured or outside the corresponding area).
Value determination	An examiner's determination of the suitability of an impression for comparison: value for individualization (VID), value for exclusion only (VEO), or no value (NV). A latent value determination is made during the Analysis phase. Agency policy often reduces the three value categories into two, either by combining VID and VEO into a value for comparison (VCMP) category or by combining VEO with NV into a "not of value for individualization" (Not VID) category [survey in 7].
VCMP	Value determination based on the analysis of a latent that the impression is of value for comparison (either VEO or VID).
VEO	Value determination based on the analysis of a latent that the impression is of value for exclusion only and contains some friction ridge information that may be appropriate for exclusion if an appropriate exemplar is available. See also NV and VID.
Verification	The final phase of ACE-V: the independent application of the ACE process by a subsequent examiner to either support or refute the conclusions of the original examiner. Not addressed in this study.
VID	Determination based on the analysis of a latent that the impression is of value and is appropriate for potential individualization if an appropriate exemplar is available. See also VEO and NV.

¹ National Institute of Standards (2011) American National Standard for Information Systems: Data format for the interchange of fingerprint, facial & other biometric information. ANSI/NIST-ITL 1-2011. (http://fingerprint.nist.gov/standard)
2 SWGFAST (2013) Standards for Examining Friction Ridge Impressions and Resulting Conclusions, Version 2.0. (http://www.swgfast.org/documents/examinations-conclusions/130427_Examinations-Conclusions_2.0.pdf)

Measuring what latent fingerprint examiners consider sufficient information for individualization determinations — Appendices

 $3\ Hicklin\ RA,\ Buscaglia\ J,\ Roberts\ MA\ (2013)\ Assessing\ the\ clarity\ of\ friction\ ridge\ impressions.\ \textit{Forensic\ Sci\ Int\ 226(1)}: 106-117.$

4 SWGFAST (2012) Individualization / Identification Position Statement, Version 1.0. (http://swgfast.org/Comments-Positions/120306_Individualization-Identification.pdf)

5 SWGFAST (2011) Standard terminology of friction ridge examination, Version 3.0.

(http://swgfast.org/documents/terminology/110323_Standard-Terminology_3.0.pdf)

6 Federal Bureau of Investigation; Universal Latent Workstation (ULW) Software.

(https://www.fbibiospecs.org/Latent/LatentPrintServices.aspx)

7 Ulery BT, Hicklin RA, Buscaglia J, Roberts MA (2011) Accuracy and reliability of forensic latent fingerprint decisions. Proc Natl Acad Sci USA 108(19): 7733-7738. (http://www.pnas.org/content/108/19/7733.full.pdf)